



FDOT

TRANSPORTATION SYMPOSIUM

2019

**FDOT Traffic Design Tools
(FDOT C3D & FDOT ORD)**

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What will be Covered (Part 1)

Civil 3D Traffic Plan Updates

- Mast Arm Assemblies
- Pavement Marking Tool
- Place Block Group
- Multi-Line Tool
- FDOT Signs

What will be Covered (Part 2)

ORD Traffic Plan Updates

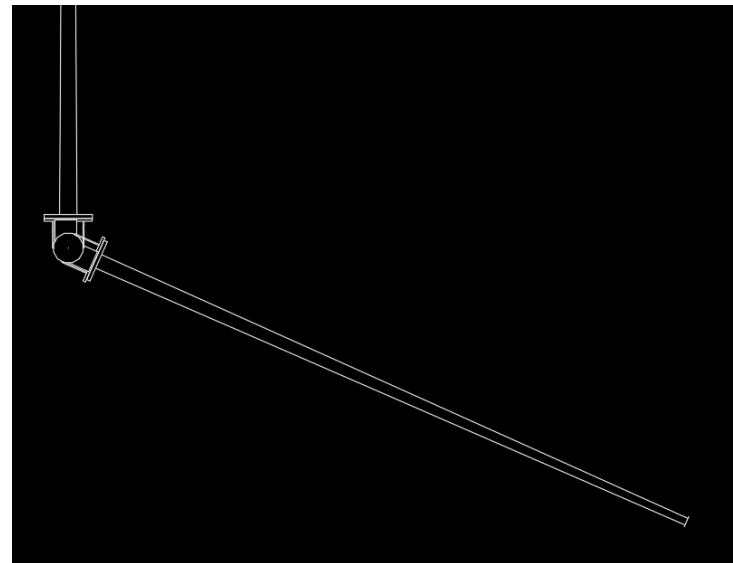
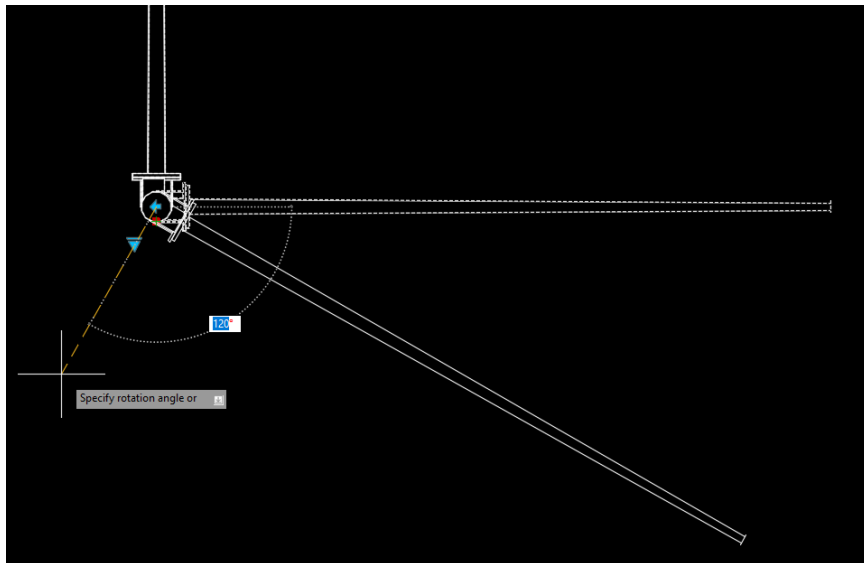
- FDOT Signs Demonstration and Overview
- Pavement Marking Tool & Place Cell Group Updates

Part 1

Civil 3D

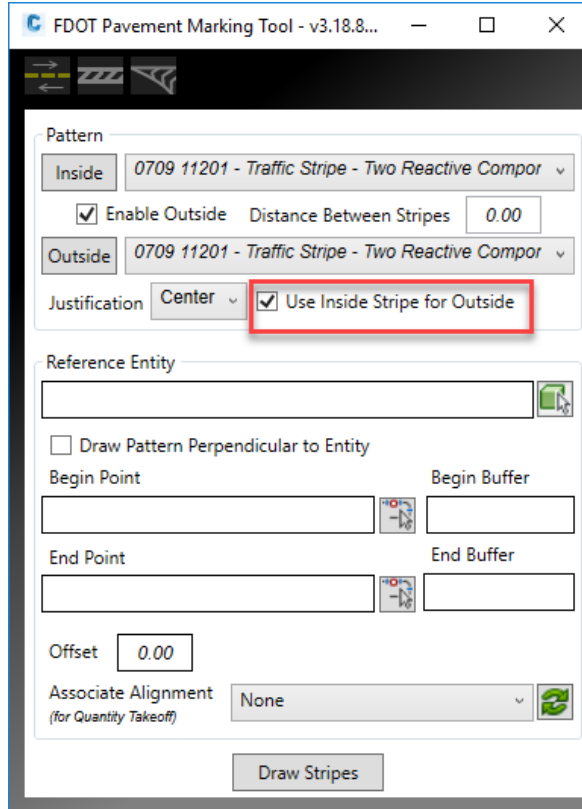
Mast Arm Assemblies

A Rotation parameter was added to all mast arm assemblies, which allows the designer to rotate an arm so that it isn't 90 degrees to the other one. An example is shown below.



TOOL PALETTES - FDOT TRAFFIC	
Mast Arm Assemblies	Mast Arm Assemblies Furnish & Install
	MAPoleP2 (Single & Double)
	MAPoleP3 (Single & Double)
	MAPoleP1 (Single & Double)
Signal Blocks	MAPoleP4 (Single & Double)
	MAPoleP5-6 (Single & Double)
Signal Heads	MAPoleP7 (Single & Double)
	Mast Arm Assemblies Furnish & Install on Existing Foundation
	MAPoleP1 on Exist Fnd (Single & Double)
	MAPoleP2 on Ex Fnd (Single & Double)
	MAPoleP3 on Ex Fnd (Single & Double)
	MAPoleP4 on Ex Fnd (Single & Double)
	MAPoleP5-6 on Ex Fnd (Single & Double)
Signal & Lighting T...	MAPoleP7 on Ex Fnd (Single & Double)

FDOT Pavement Marking Tool



The screenshot shows the 'FDOT Pavement Marking Tool - v3.18.8...' window. The 'Pattern' section is active, showing 'Inside' and 'Outside' pattern dropdowns, both set to '0709 11201 - Traffic Stripe - Two Reactive Compor'. The 'Enable Outside' checkbox is checked, and the 'Distance Between Stripes' is set to '0.00'. The 'Justification' dropdown is set to 'Center'. A red box highlights the 'Use Inside Stripe for Outside' checkbox, which is also checked. Below the 'Pattern' section is the 'Reference Entity' section, which includes a text input field, a 'Draw Pattern Perpendicular to Entity' checkbox, and fields for 'Begin Point', 'Begin Buffer', 'End Point', and 'End Buffer'. The 'Offset' is set to '0.00'. The 'Associate Alignment' dropdown is set to 'None'. A 'Draw Stripes' button is at the bottom.

There is a new option in the pavement marking tool that allows the outside pattern to match the inside pattern. This saves time because before you had to browse for both patterns independently.

FDOT Place Block Group

FDOT Place Block Group Tool

Block Group Location

Save Pattern Load Pattern

Offset 0.00

Origin to Origin Upstream Spacing 0.00

Offset 0.00

Origin to Origin Downstream Spacing 0.00

Offset 0.00

☒ Enable Pickstyle

☒ Enable Grouping

Place

Pay Item Database

Search

Expand All Collapse All

- Roadway Design
- Drainage
- Utilities
- Signalization
- Signing
- Pavement Markings
- ITS
- Highway Lighting
- Landscaping
- TEXT

OK Cancel Browse for Blocks

FDOT Place Block Group Tool

Block Group Location

Entity Used for Block Placement

Associate Alignment (for Quantity Takeoff) None

Block Placement Range

Begin Buffer Distance 0.00

End Buffer Distance 0.00

Spacing and Angle

Spacing Increment 0.00 Angle Relative 0.00

Justification

Center Block Origin

☒ Enable Pickstyle

☒ Enable Grouping

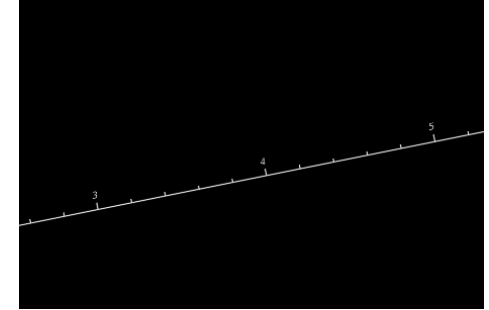
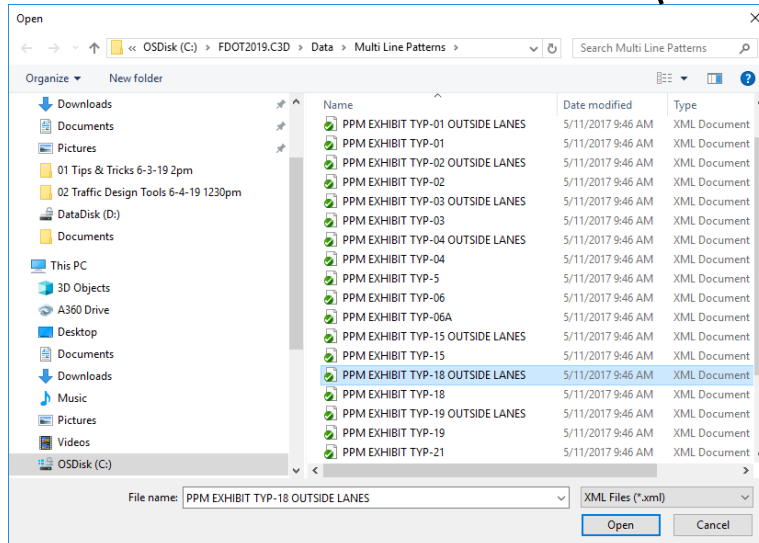
Place

Place Block Group has several new options when you click on the red browse button. You have an option to expand or collapse all for the categories, along with a search option if you know the name or pay item number. You can also use the Browse for Blocks button located on the bottom to use your own blocks outside of the Pay Item database.

FDOT Multi-Line

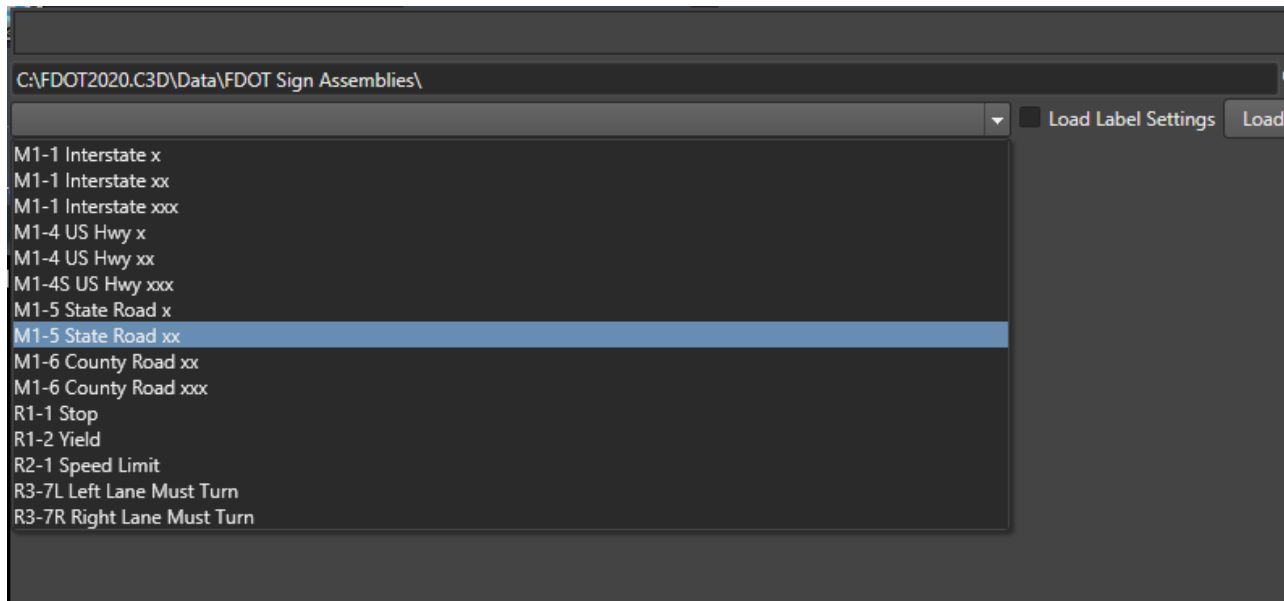
Nothing new to report on the FDOT Multi-Line app, but if you haven't been using it you are missing out on reducing your drawing time. The example shown below is a divided curbed highway. You have an option to just place the pattern as is or you can add additional patterns. The example shows I added 3 10-30 Skip patterns to one side.

Note that each subline will be placed on its Correct Layer and Pay Item id if applicable.

A screenshot of the FDOT Multi-Line application interface. The 'Entity Used for Placement' section shows 'Alignment: Alignment - (3)' selected. The 'Multi-Line Placement Range' section shows 'Begin' at '00+00' and 'End' at '10+00'. The 'Associate Alignment (for Quantity Takeoff)' section shows 'None' selected. A table lists various layers and offsets, with 'CurbBack' at 8.75 and 'CurbFace' at 9.5. The 'Draw Multi-Line' button is at the bottom.A screenshot of the FDOT Multi-Line application interface. The 'Entity Used for Placement' section shows 'Alignment: Alignment - (3)' selected. The 'Multi-Line Placement Range' section shows 'Begin' at '00+00' and 'End' at '10+00'. The 'Associate Alignment (for Quantity Takeoff)' section shows 'None' selected. A table lists various layers and offsets, with 'CurbBack' at 8.75 and 'CurbFace' at 9.5. The 'Draw Multi-Line' button is at the bottom.

FDOT Signs – Delivered Sign Assemblies

Did you know when the State Kit was installed it also installed some pre built sign assemblies that are ready to go? Located in the data folder within the state kit install there is a FDOT Sign Assemblies folder that contain common signs as shown below. When opened the information populates the form saving you clicks. You can also edit the assembly if needed.

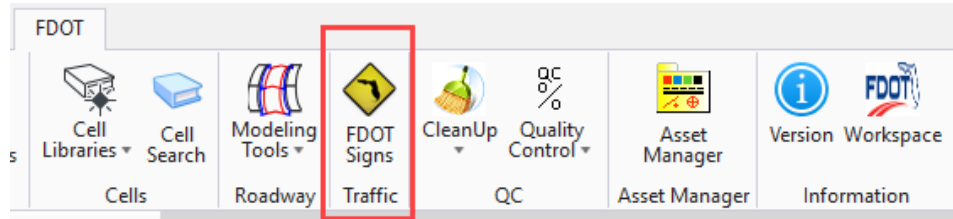


Note: Did you know that the saved xml sign assemblies will also work in the ORD Sign tool? Yes, finally cross platform compatibility!

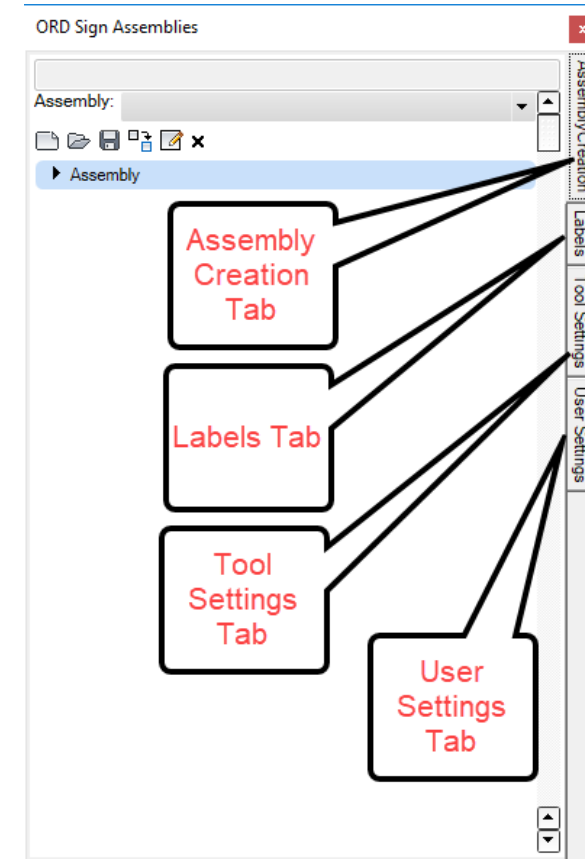
Part 2

FDOT ORD

ORD FDOT Signs Overview



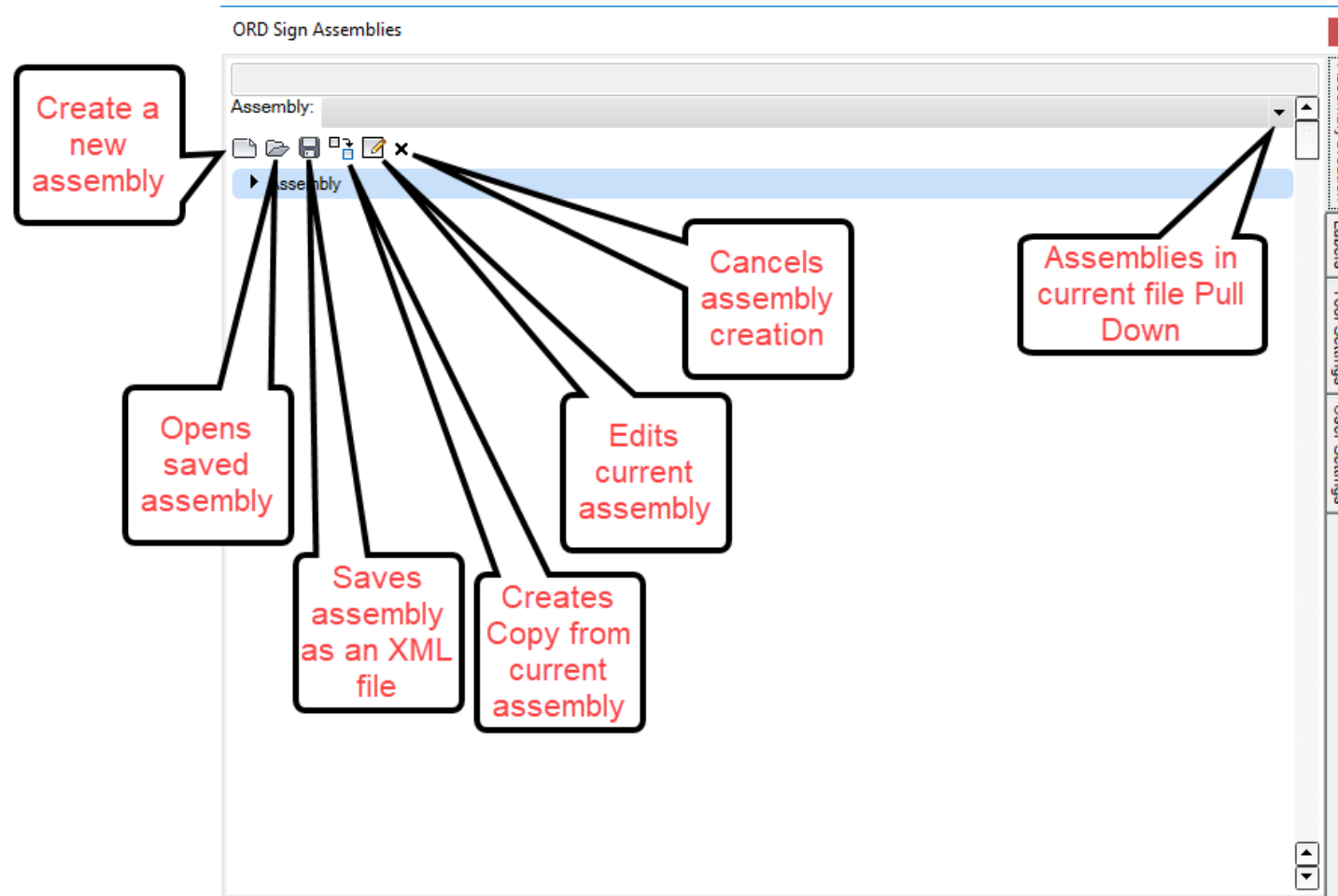
Located on the FDOT Ribbon is the FDOT Signs application



FDOT Signs Dialog Box

ORD FDOT Signs Overview

Assembly Creation Tab



This is the default tab and starting point to either building a new assembly or opening a saved assembly.

ORD FDOT Signs Overview

Labels Tab

The screenshot shows the 'ORD Sign Assemblies' window with the 'Labels' tab selected. The interface is divided into three main sections: General, Panel, and Post. The General section includes a 'Text Style' dropdown, an 'Add Shapes' checkbox, and buttons for 'Add/Update Shapes' and 'Remove Shapes'. The Panel section includes checkboxes for 'Display Name', 'Display Size', and 'Display State', a 'Level' dropdown, and a 'Place Panel Label' button. The Post section includes checkboxes for 'Display Pay Item', 'Display Station', and 'Display State', a 'Level' dropdown, and a 'Place Post Label' button. A vertical toolbar on the right contains buttons for 'Assembly/Creation', 'Labels', 'Tool Settings', and 'Settings'. Callouts provide detailed explanations for various controls.

Default Font is FDOT

Controls whether shapes are placed with the labels. Shapes are ovals and rectangles. You can add or remove shapes after labeling

Controls for what information is displayed in the Panel label. Panel Name, Panel Size, & State (To be Relocated, Existing to Remain, etc)

Controls for what information is displayed in the Post label. Pay Item, Post Station, & State (To be Relocated, Existing to Remain, etc)

Controls what level the panel label is placed on

Executes the Panel label command

Controls what level the post label is on

Executes the Post label command

The Labels tab contains the settings and controls for placing assembly labels.

ORD FDOT Signs Overview

Tool Settings Tab

The screenshot displays the 'ORD Sign Assemblies' tool settings tab, which is divided into several sections. The 'Connector' section includes a 'Set Level' dropdown menu currently set to 'TextLabel' and a 'Connect Assembly' button. The 'Modification' section contains buttons for 'Issue Clean Up', 'Convert Free', 'Match Scale', and 'Update Stations'. To the right of these sections is a vertical toolbar with icons for 'Assembly/Creation', 'Labels', 'Tool Settings', and 'User Settings'. A separate 'Cleanup' window is also shown, featuring checkboxes for 'Same Assembly', 'Same Post', 'Same Sign Label', 'Orphan Label', and 'Missing Alignment', along with a 'Clear Highlight' button and a table with columns 'Issue', 'Action', and 'Execute'.

Connector controls for drawing on the desired level and allowing the user to draw a connector after assembly has been placed in drawing. The connector is a leader line connecting the post to the panel.

Issue clean up searches for and allows user to remove deleted data based on the search criteria shown below.

Places assembly without alignment association

Forces the update of the Post Station if assembly is moved in drawing

Forces assembly cells to match drawing scale for proper display

The Tool Settings tab contains several utilities and controls for working with assemblies.

ORD FDOT Signs Overview

User Settings Tab

ORD Sign Assemblies

▼ General

Highlight Assembly When Selected: ☒

Show Label Removal Warning: ☒

Add Connector On Placement: ☒

Show Alignment Warning: ☒

Zoom Assembly When Selected: ☒

Zoom Factor: 2

Zoom View: 4

Tab Alignment: Right

▼ Files

Browse Folder: C:\temp\

Custom Guide File: C:\FDOTConnect\Organization-Civil\FDOT\Cell\muted.cel

Panel Cell Folder: C:\FDOTConnect\Organization-Civil\FDOT\Cell\

Post Cell Library: C:\FDOTConnect\Organization-Civil\FDOT\Cell\PavementMarkings.cel

▼ Admin Only

Application Folder:

FDOT.Signs.xml File:

SettingsDefault.xml File:

Error Log File:

Load Default Settings

Validate Fdot.Signs.xml

FDOT Sign Assembly Tool Version: 03.00.04.08

Assembly/Configuration

Labels

Tool Settings

User Settings

When toggled on it allows the user to easily see the assembly highlighted in the drawing when selected from the pulldown list

Informs the user that an already placed label is about to be replaced with a revised label

Allows user to change the tab position between top and right

Opens the FDOTSigns folder in the ORD build

- Opens the error log file to show the user what is causing an error or application crash

Displays Version information

Controls the automatic placement of the connector when placing the assembly

• Informs the user when an alignment has been edited

Allows user to adjust the zoom factor and view

Shows the pathing locations for resources. User can set these from the settings xml file or select the browse icon

Opens the FDOT.Signs.xml file for viewing

Opens the SettingsDefault.xml file for viewing or editing

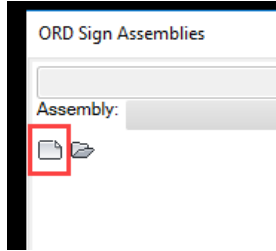
Validates that all cells are available for use and lists missing cells

Loads the settings from the SettingsDefault.xml file

The User Settings tab contains options to control how the application works and pathing for resources.

ORD FDOT Signs Overview

Creating a New Assembly



Click on Create New Assembly

A screenshot of the 'ORD Sign Assemblies' dialog box. The 'Assembly' tab is selected, showing fields for 'Name' (set to 'sign-001'), 'Justify' (set to 'Left'), and 'Structure' (set to 'Panel and Post'). There is a 'Confirm Assembly Settings' button at the bottom. The dialog also has tabs for 'Assembly/Creation', 'Labels', and 'Tool Settings' on the right side.

Notice the name has a -001 at the end of every name, this is so the application can keep track of each assembly in the drawing and allows you to have multiple instances of the same name. The counter keeps increasing by 1.

On the Assembly panel;

1. Type in the Assembly Name
2. Select the Justification (Left, Center, or Right)
3. Structure Type (Panel and Post, Panel Only, or Panel and Post Combined)
4. With selections made click on Confirm Assembly Settings

ORD FDOT Signs Overview

The screenshot displays the 'ORD Sign Assemblies' software interface. At the top, there is a tabbed menu with 'Assembly/Creation' selected. Below this, a sidebar on the left contains a tree view with 'Assembly' and 'Panel' options, where 'Panel' is currently selected. The main area is divided into two sections: 'Panel Search' and 'Panel Preview'. The 'Panel Search' section includes fields for 'Location' (set to 'F(0.0)'), 'Panel Search' (with a magnifying glass icon), 'Application' (set to 'Conventional'), 'Panel Class' (set to 'Regulatory(R)'), 'Panel Name' (set to 'R01-03 [4-WAY]'), 'Size' (set to '18"x6"'), 'State' (set to 'Proposed'), and 'Feature' (with a magnifying glass icon). The 'Panel Preview' section shows a large black rectangle representing the sign panel, with a white rounded rectangle in the center containing the text '4-WAY'. Below the preview, there are two area calculations: 'Panel Area: 0.75 ft²' and 'Total Area: 0.00 ft²'. At the bottom, there are two buttons: 'Add First Panel' and 'Confirm Assembly'. A 'Post' button is located at the very bottom left.

Next is the Panel;

1. Select the Application
2. Select the Panel Class
3. Select the Panel Name, for easier use the panel name is included with the panel number
4. Select the size from already defined sizes by clicking the spyglass
5. Select the desired State
6. With selections made click on Add First Panel
7. Repeat the process if adding additional panels, otherwise select Confirm Assembly

Notice the Panel and Total area to the left, as you add panels the area increases which is how the Assembly gets its pay item assigned.

ORD FDOT Signs Overview

ORD Sign Assemblies

Set post options.

Assembly Creation

Labels Tool Settings User Settings

Assembly

Panel

Post

Post Search:

Installation: Ground Mount

Mounting: Single or Multi-Post

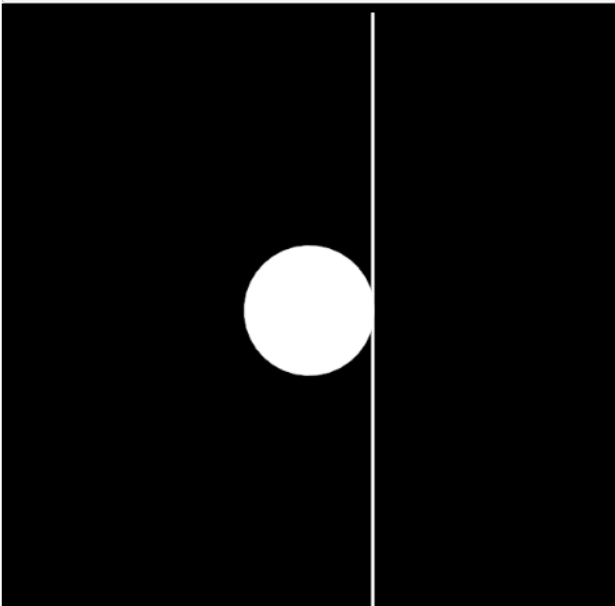
State: Proposed

Sign Type: Furnish and Install Ground Mount

Options: 1 Sided

Feature:

SINGLE POST SIGN [1 SIDED], FURNISH and INSTALL GROUND MOUNT, UP TO 12 SF



Confirm post

Next is the Post;

1. Select the Installation
2. Select the Mounting
3. Select the State
4. Select the Sign Type
5. Select the Post Options
6. With selections made click on Confirm Post

ORD FDOT Signs Overview

ORD Sign Assemblies

Place panel(s) and post.

✕

► Assembly

► Panel

► Post

▼ Placement

Rotation Type: Relative

Rotation Angle: 0

Place on Alignment: ☒

Place Panel

Place Post

Finish Assembly

Next is the Placement;

1. Select your Rotation options (What is shown should be your defaults)
2. Make sure Place on Alignment is toggled to associate assembly to alignment
3. Click Place Panel > Select the Alignment in the Drawing, then left click to place panel
4. Click Place Post > Select Alignment in the Drawing, then left click to place post
5. Click Finish Assembly when satisfied with location
6. From here select the Label tab and
7. With selections made click on Confirm Post

ORD Sign Assemblies

Assembly/Creation | Label | Tool Settings | User Settings

▼ General

Text Style:

Add Shapes: ☒

Add/Update Shapes

Remove Shapes

▼ Panel

Display Name: ☒

Display Size: ☒

Display State: ☐

Level: TextLabel

Place Panel Label

▼ Post

Display Pay Item: ☒

Display Station: ☒

Display State: ☐

Level: PayItem_dp

Place Post Label

Next is Labeling;

1. Click on the Label Tab
2. Double check your settings and level selections
3. Click on Place Panel Label > Select panel > Left click where you want placement
4. Repeat step 3 if you have additional panels on the same assembly
5. Click on Place Post Label > Select post > Left click for placement under panel label